"discriminate" means the method and probes can differentiate the presence of one organism from another. That is an important aspect of the invention described in the specification. Applicant respectfully submits that the new claims comply with § 112.

Rejections Under 35 U.S.C. § 102(b) and 103(a)

As discussed in the Examiner's Interview, this invention for the first time describes a method and probe for distinguishing between certain, closely related species of bacteria, especially the Shigella and E. coli species detailed in the specification. The cited art does not teach or suggest the method or probes as recited in the new claims.

The USPTO office action characterized Kohne (5,601,984) as distinguishing between different species. Kohne discusses the use of a probe to hybridize to a rRNA subunit or a rRNA subunit gene. Previous attempts to follow Kohne's procedure to distinguish between closely related species of *Shigella* and to differentiate between the closely related species of *Shigella* and *Escherichia coli* did not work. Kohne's method failed to make any of these identifications. In evidence presented in patent 5,601,984, Kohne himself fails in Tables 3, 6, and 7 to distinguish among species of *Mycoplasma, Acholeplasmataceae, Proteus, Providencia, Spirolplasma, Legionella,* or *Flavobacterium.*

It is critical to make species distinctions as, for example, infections with different species of *Shigella* must be reported to the Centers for Disease Control and treatment for *Shigella* or *Echerichia coli* differs and therefore requires precise identification of the exact species. At best, Kohne can only discriminate among genus, not species. The failure of the Kohne procedure to make these subtle discriminations led to the present invention.

Furthermore, the present invention presents an assay for species that is simpler and faster than Kohne, who used reverse transcriptase, with a known high error rate for transcription, together with hydroxapatite screening for hybridized species and tritium counting. The large probes produced by the Kohne method are less sensitive than those in the present invention for making fine discriminations based on very small changes in nucleotide sequences.

All of the stated grounds of objection and rejection have been traversed or rendered moot. Applicant believes that this application is now in condition for allowance. If the Examiner believes, for any reason, that a personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Respectfully submitted,

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